

32.0 SOUTHERN CALIFORNIA STEELHEAD ESU

32.1 BACKGROUND

32.1.1 Description of the ESU

The Southern California Steelhead (SCS) evolutionarily significant unit (ESU) includes all naturally spawned populations of steelhead and their progeny in the area extending from the Santa Maria River basin near the town of Santa Maria, south to the United States border with Mexico. There are several populations of *O. mykiss* within the geographic borders of Mexico that may be part of the genetic lineage of the ESU (BRT 2003). The southern California ESU is the known extreme southern limit of the anadromous form of *O. mykiss*. No hatchery production exists in the ESU.

32.1.2 Status of the ESU

The SCS ESU was listed as an endangered species on August 18, 1997 (62 FR 43937), based on extensive loss of populations and habitat due to the effects of urbanization, channelization and dewatering of creeks, artificial barriers to migration, and the introduction of exotic fish and riparian plants (BRT 2003). The SCS ESU is subject to extreme environmental episodes, and populations undergo repeated local extinctions and recolonizations. Both resident and anadromous forms of *O. mykiss* are integral to ESU sustainability (BRT 2003). ESU abundance was estimated at less than 500 fish in 1997. Historical abundance has ranged between 32,000 and 46,000, including average estimates for the Santa Ynez (~14,000), Ventura (4,500), and Santa Clara (9,000) rivers. Juvenile steelhead have recently been observed in all three of those river systems. There is no recorded data on steelhead presence in the Santa Clara River system as of 1997 (BRT 2003). A comprehensive assessment of the population distribution in 2002 found steelhead presence in 37 to 43% of historical drainages (BRT 2003). Landlocked populations may exist in tributaries above barrier dams in the San Diego, Otay, San Gabriel, Santa Ana, and San Luis Rey river basins and would be subject to effects from planted hatchery fish and recreational fishing. With the exception of the Gaviota and San Mateo creek stocks, no anadromous *O. mykiss* were found between the Santa Monica Mountains and the Mexican border (BRT 2003). There have been recent steelhead recolonizations of Topanga and San Mateo creeks and documented recolonization attempts by a few individual steelhead in other systems (BRT 2003). The West Coast Biological Review Team (BRT) members cast 81% of votes for the “in danger of extinction” category and 19% of their votes for the “likely to become endangered” category. The BRT expressed strong concerns for ESU abundance and productivity, and spatial structure was also considered at significant risk (BRT 2003).

32.2 ASSESSMENT OF THE HATCHERY PROGRAMS

There are no anadromous steelhead hatchery programs in the SCS ESU.

32.3 CONCLUSION

Existing Status: Endangered
BRT Finding: Endangered
Recommendation: Endangered

32.3.1. ESU Overview

32.3.1.1 History of Populations

SCS ESU populations have been extirpated from approximately 60% of their historical range. Steelhead presence remains in three of the larger river systems, the Santa Maria, the Santa Ynez, and the Ventura river basins. No steelhead have been observed in the Santa Clara River system since 1997. Eleven of 15 major watersheds in the ESU are known to have *O. mykiss* populations recently land-locked in reservoirs behind dams blocking anadromous access to the majority of historical habitat (BRT 2003). Extant anadromous populations of *O. mykiss* are barred from spawning habitat by man-made barriers. Some native steelhead stocks are restricted to reservoirs, whereas their anadromous counterparts may be of uncertain origin or nearly extirpated. There is also doubt that current stream flows are sufficient to sustain the Sespe Canyon and Sisquoc River steelhead populations; both are considered to be of significant size and importance in the ESU.

32.3.1.2 Association between Natural Populations and Artificial Propagation

There are no anadromous steelhead hatchery programs in the SCS ESU.

32.3.2. Summary of ESU Viability

32.3.2.1 Abundance

Steelhead have been extirpated from more than half of ESU historical distribution. Recent run sizes for indicator streams cumulatively totalled 500 adults, representing an approximate decline to 1.1 to 1.6% of historical abundance.

32.3.2.2 Productivity

Anadromous populations have suffered a reduction in spawning habitat and decline in abundance, reducing the effective size of the spawning population (BRT 2003). Degraded habitat may be unable to sustain whatever productivity can occur in the ESU in some drought years.

32.3.2.3 Spatial Structure

Recent surveys have determined a reduction of spatial structure to approximately 40% of historical steelhead distribution.

32.3.2.4 Diversity

Many anadromous populations are of unknown ESU affinity. It is also not known how reservoir populations of *O. mykiss* are genetically affected by introduced fish.

32.3.3 Artificial Propagation Record

None.

32.3.4. Summary of Overall Extinction Risk Faced by the ESU

The SCS ESU anadromous populations have experienced significant reduction in spatial distribution and environmental degradation in remaining habitat. Extant anadromous populations are in severe decline and increasingly scattered, affecting metapopulation dynamics. Several native *O. mykiss* populations are land-locked behind dams and may represent a significant portion of the genetic legacy of the ESU; they are vulnerable to genetic and demographic impacts from hatchery fish plants. The loss of historical spawning habitat, degraded environmental conditions, insufficient stream flows, and impacts from urbanization have brought calls for an aggressive plan of action, including the removal of obsolete dams. There has been a positive fish population response to restoration in the Carmel River, and recent recolonization efforts by steelhead in Topanga and San Mateo creeks have demonstrated that the southernmost populations respond opportunistically to favorable conditions. Nevertheless, the high rate of extirpation, insufficient information on extant populations, extreme arid climate, and effects of high urban growth make this ESU one of the most endangered in California.

32.4 LITERATURE CITED

BRT (West Coast Salmon Biological Review Team). 2003. Updated status of Federally listed ESUs of West Coast salmon and steelhead. Northwest Fisheries Science Center, Seattle, Washington; Southwest Fisheries Science Center, Santa Cruz Laboratory, Santa Cruz, California. July 2003.